**CLEAN WATER COUNCIL**
**Meeting Highlights**
**November 12, 2002**

**Location**
NJ Environmental Infrastructure Trust, Building 6, Suite 201, 3131 Princeton Pike, Lawrenceville, NJ.

**Attendees:** Kerry Kirk Pflugh, Pamela Goodwin, James Cosgrove, Anthony McCracken, Pat Pittore, Barbara Rich, Helen Heinrich, Jane Nogaki, Lou Mason Neely, Ed Clerico, Dan Van Abs, Russell Furnari, Mary Beth Koza and Ursula Montis, Secretary.

**Meeting today will be presided over by Pamela Goodwin, (Saul, Ewing, Remick and Saul) Vice Chair for CWC**

**Presentation on Phosphorus and lawn fertilizers was done by Dr. Vincent Snyder, Jr, Ph.D., Senior Technical Associate at The Scotts Co., and with him Paula Bodey, who is in charge of the regulatory and environmental affairs at Scotts. A summary of the presentation is as follows:**

- First and foremost, phosphorus is a vital nutrient that's critical for all plant life. It is responsible for growth in all parts of the plant.

- When limited, phosphorus inhibits the plant's ability to grow, thrive and reproduce. Lawns forced to grow in soils that are low in phosphorus take longer to establish and are far less vigorous and dense.

- When applied, phosphorus is quickly "fixed" to soil particles, then slowly absorbed by the plant. Over time, the plants deplete the soil of this vital nutrient. In turn, fertilizer containing phosphorus is needed to maintain the minimum level of phosphorus in the soil.

- Runoff, by definition, is water that hasn't infiltrated the soil. It literally runs across the soil surface.

- **Very little water runs off a thick, healthy lawn.**

- The peer-reviewed research cited in this paper demonstrates that lawn fertilizers do not contribute to phosphorus loading of storm runoff. In fact, researchers in Minneapolis found that there was no difference in phosphorus levels of stormwater from a neighborhood in which a lawn fertilizer that contained phosphorus was applied and from a neighborhood in which a phosphorus-free product was applied.

- **Most of the phosphorus in urban stormwater runoff comes form natural sources such as plant pollen, decaying plant material such as leaves left along curbs and in raingutters, pet and waterfowl waste.**

**Question and answer discussion followed:**

Dr. Snyder – Since modern lawn fertilizers typically apply l part of phosphorus for every 8-11 parts of nitrogen, it would appear that the simple act of removing clippings should actually deplete the soil of phosphorus rather than saturate the soil with phosphorus. Because many homeowners still bag their clippings, small amounts of phosphorus will always be needed to maintain a dense, quality turf that prevents soil erosion. **A thick, healthy turf is the best means to prevent soil erosion and nutrient runoff from entering streams and lakes and therefore beneficial to the environment.**

Mary Beth Koza – Can you give the homeowner the option to bag or not to bag their clippings for the lawn and give them the choice of using a .02 or .04 fertilizer, depending on what they decide to do with the clippings?

Dan VanAbs – If I use clippings would I use half as much fertilizer? Can you instruct customers to use less fertilizer if they leave clippings on the lawn?

Paula Bodey – Good idea. Maybe we could suggest that line of thinking for our website for those who are into high lawn maintenance. If I understand you correctly, you are asking that if you leave clippings on the lawn, will you need half as much phosphorus as you would otherwise normally need? What would be the harm of putting more phosphorus on that kind of a lawn? Are you increasing the chances of a phosphorus runoff from leaving your clippings on **and** treating?

James Cosgrove – What you are saying is that even if I applied excess phosphorus on my lawn, it would be diminutive compared to all the other sources of phosphorus.

Dr. Snyder – A good healthy turf would not have phosphorus runoff. Phosphorus neither leaches nor runs off in solution. Soil has a tremendous ability to fix phosphorus. In practical terms, the only way for inorganic phosphorus from traditional lawn fertilizers to move from the site of application is when soils erode and the nutrient is carried along with the soil particles to which it is attached.

Lou Neely- What about golf courses?

Dr. Snyder – No, there would be no reason for phosphorus to come off of golf courses. It is no different than the lawn.

Jane Nogaki – Can you compare the phosphorus you use in your fertilizers with organic phosphorus?

Dr. Snyder – The phosphorus we use is a salt. Phosphorus is concentrated in a form of monamodium phosphate. It is a natural form of phosphorus that is taken from loams of fish sediment in Florida. It is water soluble. Tree leaves are organic phosphorus which do not precipitate but are labile. Phosphorus can leach out of the leaf and into storm water systems. The simple act of sweeping the streets could reduce phosphorus loads in storm water runoff by up to 42%. Pet Waste and waterfowl (geese) and earthworms are very significant sources of phosphorus that are often overlooked by the layperson. These organic phosphorus sources are mobile and are deposited on the surface where they can be eroded by rainfall. Phosphorus from traditional lawn fertilizer is soluble and rapidly fixed to soils.

Pamela Goodwin – Did we have algae blooms hundreds of years ago and why was there not a problem then?

Dr. Snyder – Because it was all part of a natural cycle then. You had the forest floor, which was very permeable and water would penetrate and go into the recharge. You did not have the impervious surfaces that you now have. If there are nutrients (pollen, etc) on impervious surfaces they are carried to storm drains.

Jim Cosgrove – People that use a broadcast fertilizer spreader usually are putting fertilizer on pavements, streets and driveways. Is that a problem?

Dr. Snyder – Yes, that is an educational problem. We just came out with a new edge spreader that will enable you to direct where the fertilizer will go.

Paula Bodey – We need to educate the consumer not to put fertilizer on impervious surfaces and to also leave their clippings on the lawn and not to pile them and also their leaves in the gutter. Both are a direct source of phosphorus going right to the ponds and streams.

Jane Nogaki – We should be able to buy fertilizer with 0.2 phosphorus (for those who leave clippings on the lawn) instead of the current fertilizer sold with 0.4 phosphorus. Where can the consumer buy the 0.2 fertilizer if they do not need or want to apply the full amount needed to maintain a healthy lawn . It seems that Scotts is missing out on a market for this lower phosphorus product.

Paula Bodey – The average consumer does not follow the program with four applications of the fertilizer. Most put down one or two. So your typical lawn is not getting the full amount of phosphorus needed.

Dr. Snyder – A thick, healthy lawn will impede the flow of water across the surface of the soil to the point where it can infiltrate the upper soil boundary and percolate down to the water table. The using new methods of putting riparian protection, where you have forested areas, around streams and lakes. Between the forest and urban areas there will be grass. Grass is the best deterrent for movement of sheet flow.

Helen Heinrich – You stated that the major way that phosphorus moves is when it is attached to sediment. Is that phosphorus fixed?

Dr. Snyder – Yes, that phosphorus is essentially fixed. When applied to soils, phosphorus from fertilizers is quickly "fixed" or becomes attached to soil particles where it remains relatively insoluble and unavailable to the plant. The chemical reactions responsible for phosphorus immobilization in soils are very rapid. Because of this property, phosphorus is generally applied very close to the root where it can still be absorbed by the plant before it is "fixed".

Helen Heinrich – Does organic phosphorus bind?

Dr. Snyder – No. It has free movement on its own. It doesn't have to bind. And as such, it can be easily carried by water into streams and lakes. Leaves do not have to move, phosphorus can leach out of them.

**Summary- Properties of Phosphorus:**

- Phosphorus is critical to the growth and vigor of all plants.
- Phosphorus plays a key role in nearly all chemical reactions that involve energy. phosphorus concentrations are highest in pollen, seed and other reproductive tissues and other fast growing tissues such as roots.
- Inorganic phosphorus is rapidly fixed or immobilized whenit comes in contact with soil particles.
- Phosphorus that is fixed does not leach nor run off of soils. The only way for fixed phosphorus to move is when soils are eroded.
- Phosphorus is the nutrient that generally limits the growth of aquatic organisms and plants.
- Phosphorus is not toxic to aquatic organisms and plants.

**Discussion on Reaction of Commissioner's Meeting**

Pamela Goodwin asked for comments on this meeting and productive we thought it was.

Lou Mason Neeley commented that he felt that it was the same things that we have been hearing for the last two or three months. However, on a positive note, he was pleased that the Commissioner decided to give the phosphorus protocol out and that some of us are reviewing that now.

Jane Nogaki – She was here representing Amy Goldsmith from NJ Environmental Federation. According to Amy, the Commissioner gave direction for CWC which included: Impaired waterways, reuse and recycling of water, and restoration. We might consider "Reuse and Recyling" as one of the topics for our future Public Hearing.

**Public Hearing Discussion**

Dan Van Abs – Just as a FYI, reuse and water reclamation (recycling) will the major topic in Statewide Water Supply Plan work that has started up now.

Pamela Goodwin – Would it be possible to still have this topic for the Public Hearing and we could both share this information?

Kerry Pflugh commented that she had previously discussed the possibility of having a joint Hearing with the lead for the State wide Water Supply Plan. The CWC would take the responsibility for setting it up, and Statewide Water Supply would act as a kind of silent partner and help us develop the questions for this topic.

Dan Van Abs – One thing he did not hear from Commissioner was whether we had the financial capabilities to do all this new work. Even in good fiscal times, it is tough to get things done.

Jane Nogaki – There are questions that should be asked concerning the topic of reuse and recyling. What are the constraints? What are the quality concerns? What are the benefits? How close can you be, etc.?

Pamela Goodwin suggested that Jane put the discussed topic for the Public Hearing in the form of a motion.

Jane Nogaki moved that we have "Reuse and Recycling" as a topic for our Public Hearing with the idea of using our December meeting for the purpose of planning and developing questions to be asked on this topic.

Russell Furnari seconded the motion.

Motion was voted on and unanimously passed

**Action Item**

Pamela Goodwin commented that Pat Matarazzo suggested mid March as a date for the Public Hearing or mid April, if March was a problem. Kerry and Ursula will follow up with obtaining a meeting place with discussion on the Public Hearing questions, etc. to follow at our next meeting on December 17th.

**DEP Update**

Kerry reported that the proposed reorganization chart has been approved by the Commissioner but now has to go through Personnel. There will be a Northern and Southern Bureau. There will be a Bureau responsible for technical issues such as TMDL's, and any other environmental analysis type of work in the program. There will be a bureau that will evaluate and monitor our performance, creating data bases to track

progress toward meeting our various objectives. There will be a unit responsible for Outreach and Education. Ken Klipstein will be the Bureau Chief for the Northern Region and Dave Rosenblatt will be Bureau Chief for the Southern Region. The Northern Region will include what is now the Raritan, the Northwest and the Northeast Bureaus. The Southern Region will include the Atlantic and the Delaware Regions. There is a Policy group that will be responsible for rule writing, the stormwater rules and probably the Statewide Water Supply Plan effort. The Outreach and Education group will be out of the Director's office.

Helen Heinrich – How much participation will you have with the PAC's and TAC's?

Kerry – We have not really delineated the roles yet. The role of the Outreach program will be a support group to develop information materials, to do council, to work with everybody. For example, the TMDL process requires public outreach and it is very likely we will develop that outreach plan and make sure that whatever need to happen according to the rules will, in fact, happen.

Dan Van Abs – Larry Baier was at the Lower Raritan Middlesex Co. Water Resources Assoc. meeting on Thursday night and that one of the things he mentioned was his plan to have a liaison from the two regional bureaus for each of the Watershed Management Areas. He did not say what each one of the liaisons would do, but that there would be one for each of the WMA's.

Motion made and passed to adjourn the meeting.